

IN THE CLAIMS

CLAIM 1 (Currently Amended) A structure comprising process for making angled flying lead wire structures attached to an electronic circuit component comprising:

~~a first process step used to bond said flying lead wire structures are bonded~~ to a first surface of said electronic circuit component;

~~a second process step where the movement of the wire capillary tool and the XY stage are controlled to form~~ said wire structures comprise a desired shape in said flying lead wire; and

~~a third process step where a single shear blade mechanism is positioned in contact with~~ said flying lead wire having a shear blade cut end.[[;

a forth process step where said capillary tool is raised to tension said wire against said shear blade and sever said wire.]]

CLAIM 2 (Currently Amended) A process structure according to claim 1, further including forming said flying lead wires with comprise a plurality of angles relative to the surface of said electronic circuit component.

CLAIM 3 (Currently Amended) A process structure according to claim 2, further including forming said flying lead wires with comprise a plurality of heights relative to the surface of said electronic circuit component.

CLAIM 4 (Currently Amended) A process structure according to claim 3, further including forming said flying lead wires to have comprise a shape selected from the group consisting of linear, piece wise linear, continuously curved, and combinations thereof.

CLAIM 5 (Currently Amended) A process for making structure comprising flying lead wire structures attached to an electronic circuit component comprising:

bonding said flying lead wire structure is bonded to a first surface of said electronic circuit component;

~~controlling the movement of the wire capillary tool and the XY stage to form said wire structure comprise~~ a desired shape in said flying lead wire; and

~~shearing said flying lead wire with a double shear blade mechanism positioned on opposite sides of said flying lead wire and creating a small nick on opposite sides of said wire.~~[[;

]
said capillary tool is raised to sever said wire at the point where said nicks were formed by said shear blades, said flying lead wires having wire tip end.]]

CLAIM 6 (Currently Amended) A process structure according to claim 5, further including forming said flying lead wires with comprise a plurality of angles relative to the surface of said electronic circuit component.

CLAIM 7 (Currently Amended) A process structure according to claim 6, further including forming said flying lead wires with comprise a plurality of heights relative to the surface of said electronic circuit component.

CLAIM 8 (Currently Amended) A structure according to anyone of claims 1 or 5, further including maintaining said flying lead wire further comprise disposed in a predetermined position by disposing a sheet of material having a plurality of openings therein through which said flying lead wires project .

CLAIM 9 (Currently Amended) A structure according to claim 8, further including a compliant frame structure, wherein a compliant frame structure is used to support said sheet of materials.

CLAIM 10 (Currently Amended) A structure according to claim 8, wherein said sheet is spaced apart from said surface by an electronic component to provide flexible support.

CLAIM 11 (Currently Amended) A structure according to claim 8, wherein said sheet is spaced apart from said surface of the electronic component by a rigid support, said rigid support serves as a stand-off, or hard stop, to limit the degree of movement of said wire tip end in a direction perpendicular to said surface.

CLAIM 12 (Currently Amended) A structure according to claim 8, wherein said sheet is spaced apart from said surface of the electronic component by a support with the composite structure of both a rigid and a compliant layer.

CLAIM 13 (Currently Amended) A structure according to claim 10, wherein a space between said surface of the electronic component and said sheet is filled with a compliant medium.

CLAIM 14 (Currently Amended) A structure according to claim 13, wherein said the compliant medium is an elastomeric material.

CLAIM 15 (Currently Amended) A structure according to claim 13, wherein said the compliant medium is a foamed polymer material.

CLAIM 16 (Currently Amended) A structure according to claim 10, wherein said flexible support is selected from the group consisting of a spring and an elastomeric material.

CLAIM 17 (Currently Amended) A structure according to claim 8, wherein said wire tip ends comprise a structure selected from the group consisting of a protuberance, a

spherical contact geometry, a straight contact end, a sharp spike, multiple sharp spike, sharp nodules and the combination of the above.

CLAIM 18 (Currently Amended) A structure according to claim 8₁ wherein said wire end tips are coated with a material selected from the group consisting of Ir, Pd, Pt, Ni, Au, Rh, Ru, Re, Co, Cu, and their alloys.

CLAIM 19 (Currently Amended) A structure according to claim 8₁ wherein said angle flying lead wire is coated with a material selected from the group consisting of Ir, Pd, Pt, Ni, Au, Rh, Ru, Re, Co, Cu, and their alloys.

CLAIM 20 (Currently Amended) A structure according to claim 8₁ wherein said sheet comprises materials selected from the group consisting of Invar laminate, a Cu/Invar/Cu laminate, molybdenum laminate.

CLAIM 21 (Currently Amended) A structure according to claim 8₁ wherein said sheet comprises a material selected from the group consisting of a metal, a polymer, a semiconductor and dielectric.

CLAIM 22 (Currently Amended) A structure according to claim 20₁ wherein said the sheet is overcoated with a polymer layer.

CLAIM 23 (Currently Amended) A structure according to claim 20₁ wherein the sheet is overcoated with an insulating layer.

CLAIM 24 (Currently Amended) A structure according to claim 20₁ wherein the sheet is overcoated with a thin compliant polymer layer.

CLAIM 25 (Currently Amended) A structure according to claim 20₁ wherein the sheet is laminated between two insulating layers.

CLAIM 26 (Currently Amended) An apparatus for using said structure of claim 8, to test an electronic device comprising:

means for holding said structure of claim 1, means for retractably moving said structure of claim 1 towards and away from said electronic device so that said wire tip ends contact electrical contact locations on said electronic device, and means for applying electrical signals to said elongated electrical conductors.

CLAIM 27 (Currently Amended) A ~~process structure~~ according to claim 1, wherein said electronic circuit component is a substrate having an electrical conductor pattern.

CLAIM 28 (Currently Amended) A ~~method comprising~~:

~~providing a substrate surface having a plurality of wire bondable locations; wire bonding a wire to each of said wire bondable locations using a wire capillary tool; controlling the position of said capillary tool with respect to said substrate; after forming a wire bond of said wire to said wire bondable location moving said capillary tool relative to said surface as said capillary tool is moved away from said surface to form a wire having a predetermined shape~~ structure according to claim 1, wherein said angled flying lead bond structure further comprise a coating.

CLAIM 29 (New) A structure according to claim 5, wherein said flying lead wire structures further comprise a coating.

CLAIM 30 (New) A structure according to claim 28, wherein said coating is selected from the group consisting of Ir, Pd, Pt, Ni, Au, Rh, Ru, Re, Co, Cu and their alloys.

CLAIM 31 (New) A structure according to claim 29, wherein said coating is selected from the group consisting of Ir, Pd, Pt, Ni, Au, Rh, Ru, Re, Co, Cu and their alloys.

Respectfully submitted,

By:

Dr. Daniel P. Morris, Esq.
Reg. No. 32,053
Phone No. (914) 945-3217

IBM Corporation
Intellectual Property Law Dept.
P. O. Box 218
Yorktown Heights, New York 10598